

IN THE DRAWING(S):

The attached sheets of drawings include changes to Figure FIGS. 3 and 16. These sheets replace the original sheet showing FIGS. 3, 4 and 16. In FIG. 3, the recitation "STABLE ORERATION WINDOU" has been changed to "STABLE OPERATION WINDOW" and in FIG. 16, the term "HIGH-PRESSUR" has been changed to "HIGH-PRESSURE".

REMARKS

Reconsideration and allowance of the present patent application based on the foregoing amendments and following remarks are respectfully requested.

By this Amendment, the specification, the drawings and claims 1, 5-10, 17 and 18 are amended and a new Abstract of the Disclosure is submitted. Claims 1, 5-10, 17 and 18 are amended to correct minor clerical mistakes and to overcome the objection to the claims and the rejection of the claims under 35 U.S.C. §112, second paragraph. Support for the amendments to the claims may be found, for example, on page 6, lines 21-23 of the specification. No new matter has been added. After entry of this Amendment, claims 1-18 will remain pending in the patent application.

Applicant would like to express appreciation for the Examiner's indication that claims 7-10, 12, and 15-16 contain patentable subject matter. The Examiner indicated that claims 7-10, 12 and 15-16 would be allowable if rewritten in independent form. However, it is respectfully submitted that claims 7-10, 12, and 15-16 are allowable for the reasons set forth below.

In the Office Action, the drawings were objected to. In response, the drawings have been amended in the manner suggested by the Examiner. Namely, the recitation "STABLE ORERATION WINDOU" has been changed to "STABLE OPERATION WINDOW" in FIG. 3, and the term "HIGH-PRESSUR" has been changed to "HIGH-PRESSURE" in FIG. 16. Two replacement sheets including changes to FIGS. 3 and 16 are enclosed herewith. Accordingly, reconsideration and withdrawal of the objection to the drawings are respectfully requested.

The Abstract of the Disclosure was objected to as being too long. The Abstract of the Disclosure has been rewritten in order to overcome the objection. Accordingly, reconsideration and withdrawal of the objection to the Abstract of the Disclosure are respectfully requested.

The Specification and claims 1, 5-10, 17, and 18 were objected to because of informalities noted in the Office Action. In response, the specification and claims 1, 5-10, 17, and 18 have been amended in the manner suggested by the Examiner. Accordingly, reconsideration and withdrawal of the objection to the specification and claims 1, 5-10, 17, and 18 are respectfully requested.

Claims 1-18 were rejected under 35 U.S.C. 112, second paragraph. In connection with the rejection, the Examiner indicated that the recitation "a time ratio controller...at an

adequate time” in lines 19-24 renders the claim indefinite and that the part of the recitation “so as that the inverter outputs...at an adequate time” should be corrected so as to show that “outputs of the inverter are alternately impressed to the high-pressure discharge lamp at an adequate time at the first frequency and the second frequency.” In response, Applicant has amended claims 1, 7, 9 and 10 to positively recite that time ratio corresponds to a time ratio of an operation time at the first frequency and an operation time at the second frequency of the inverter controller. Support for the amendments to claims 1, 7, 9 and 10 may be found, for example, on page 6, lines 21-23 of the specification. Furthermore, claim 1 has been amended to positively recite that the inverter outputs at the first frequency and the second frequency are alternately impressed to the high-pressure discharge lamp at an adequate time at the first frequency and the second frequency, the time ratio being based on a lamp voltage of the discharge lamp detected in the steady lighting state using the lamp wattage detector, as requested by the Examiner. It is respectfully submitted that the amendments to claims 1, 7, 9 and 10 obviate the rejection. Accordingly, reconsideration and withdrawal of the rejection of claims 1-18 under 35 U.S.C. §112, second paragraph, are respectfully requested.

Claims 1-6, 11, 13-14, and 17 were rejected under 35 U.S.C. §103(a) based on the first embodiment (FIGS. 3 and 4a-4b) of Okamoto *et al.* (U.S. Pat. No. 5,936,358) (hereinafter “Okamoto”) in view of the third embodiment (FIG. 6) of Okamoto. The rejection is respectfully traversed.

As conceded on page 6, lines 18-19 and page 7, lines 1-2, the first embodiment of Okamoto fails to teach or suggest a lamp wattage detector for detecting a lamp wattage of the high pressure discharge lamp from a lamp across the high pressure lamp and a current flowing through the high pressure discharge lamp. Applicant respectfully submits that there are additional features absent in Okamoto.

With regard to claim 1, it is respectfully submitted that claim 1 is also patentable over the first embodiment of Okamoto at least because claim 1 recites a high-pressure discharge lamp lighting apparatus, comprising, *inter alia*, an inverter controller for controlling the inverter according to its variable frequency oscillation function by selectively impressing a first frequency in a stable operation window free from causing acoustic resonance in the high-pressure discharge lamp, and a second frequency higher than the first frequency to the inverter.

This feature is not present in the first embodiment of Okamoto. The first embodiment of Okamoto discloses a dielectric discharge lamp connected to a feeder device S. The feeder device S includes an AC power supply, an inverter circuit, a step-up transformer 16a, and an

inverter gate signal generation circuit 17. (See col. 5, lines 58-67 and col. 6, lines 1-4 and FIG. 3). Okamoto further discloses that during an interval Ta a discharge emission is produced in the lamp and during an interval Tb no discharge emission is produced. (See col. 6, lines 65-67 and col. 7, lines 1-4). In other words, the lamp is repeatedly turned on and off (at a frequency of, for example, 50 Hz) (See col. 6, lines, 26-27).

However, Okamoto is completely silent about selectively impressing a first frequency and a second frequency to the lamp, much less, about selectively impressing a first frequency in a stable operation window free from causing acoustic resonance in the high-pressure discharge lamp, and a second frequency higher than the first frequency to the inverter. In Okamoto, a single frequency is impressed to the lamp. In that regard, contrary to what is asserted in the Office Action, Okamoto does not disclose, teach or suggest that Ta and Tb (or Tc which corresponds to a time period of the second embodiment) are representative of time periods of different frequencies. As can be seen in FIGS. 4a (or 4b which corresponds to the second embodiment of Okamoto), the signal frequency applied to the electrode of the lamp(s) is the same in the first and the second periods (Ta and Tb).

The third embodiment of Okamoto fails to disclose, teach or suggest the deficiencies of Okamoto. Therefore, a combination of the first and third embodiments (or any other embodiment of Okamoto) cannot result, in any way, in the invention of claim 1. Furthermore, Applicant finds no teaching, motivation or suggestion anywhere in Okamoto of selectively impressing a first frequency and a second frequency to the lamp. Okamoto clearly indicates that during operation of a dielectric barrier discharge lamp, only one frequency in the range of, for example, 10 kHz to 200 kHz is applied to the electrodes of the lamps. (See col. 2, lines 16-19). Therefore, claim 1 cannot be rendered obvious in view of Okamoto. Claims 2-6, 11, 13-14, and 17 depend from claim 1 and are therefore patentable over Okamoto for at least the same reasons provided above in connection with claim 1 and for the additional features recited therein.

Accordingly reconsideration and withdrawal of the rejection of claims 2-6, 11, 13-14, and 17 under 35 U.S.C. §103(a) based on the first embodiment of Okamoto in view of the third embodiment of Okamoto are respectfully requested.

Claims 7-10, 12, and 15-16 were objected to as being dependent upon a rejected base claim, *i.e.*, claim 1. In light of the foregoing discussion related to claim 1, it is respectfully submitted that claims 7-10, 12, and 15-16 are allowable.

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Applicant has addressed the Examiner's rejections and objections and respectfully submits that the application is in condition for allowance. A notice to the effect is earnestly solicited.

If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,
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Attachment: Replacement Sheets 1 and 2